Abstract

A satellite communication system includes a satellite earth station operably coupled to a data network, and a plurality of satellite modems, each satellite modem of the plurality of satellite modems communicating in an upstream and downstream data communication mode with the satellite earth station via at least one servicing satellite. The satellite earth station includes a host processor for receiving data packets from the data network and processing DOCSIS management packets, a DOCSIS MAC coupled to the host processor for encrypting the transmit packet data from the host memory, framing data in MAC headers and inserting MAC timestamps in the transmit packet data, a satellite modulator coupled to the DOCSIS MAC for modulating the encrypted transmit packet data to generate downstream output data for transmission to at least one of the plurality of satellite modems, a burst demodulator for demodulating upstream data received from at least one of the plurality of satellite modems, and a turbo decoder coupled to the burst demodulator and the DOCSIS MAC for turbo decoding the demodulated data from the burst demodulator and sending the decoded data to the DOCSIS MAC. The DOCSIS MAC sends DOCSIS management packets portion of the decoded data to the host processor and sends transmit packet data portion of the decoded data to the data network.